

Application No. 09/408,873

**APPENDIX**

Reply Brief follows:

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SEP 01 2005

PATENT APPLICATION

CERTIFICATE OF TRANSMISSION

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE BEFORE THE  
HONORABLE BOARD OF PATENT APPEALS AND INTERFERENCES

Application of: Mauritius Seeger et al.	)	Examiner: Justin P. Misleh
	)	
Appl. No.: 09/408,873	)	Art Unit: 2612
	)	
Filed: 9/29/1999	)	Docket No. 99487-US-NP

Title: **MOSAICING IMAGES WITH AN OFFSET LENS**

Board of Patent Appeals and Interferences  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450

REPLY BRIEF

Sir:

Appellant respectfully submits this Reply Brief in the appeal of the present case to the Board of Appeals and Patent Interferences in response to an Office Action mailed July 1, 2005 responding to Appellant's Appeal Brief filed March 28, 2005 (hereinafter referred to as the "*Appellant's Appeal Brief*"), therein requesting under 37 C.F.R. § 41.39(b)(2) that the Appeal be maintained. Further in accordance with 37 C.F.R. § 41.39(b)(2), this Reply Brief follows the requirements of a brief as set forth in 37 C.F.R. § 41.37(c).

# TABLE OF CONTENTS

	Page
I. REAL PARTY IN INTEREST .....	1
II. RELATED APPEALS AND INTERFERENCES .....	2
III. STATUS OF CLAIMS .....	3
IV. STATUS OF AMENDMENTS .....	4
V. SUMMARY OF CLAIMED SUBJECT MATTER.....	5
VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL .....	7
VII. ARGUMENT .....	8
A. First Group Of Claims, Consisting Of Claim 18 (And Its Dependent Claims 20 and 31-35) and Claim 29 (And Its Dependent Claims 30 and 38-42), Is Patentable Over Saund and Chevrette .....	8
B. Second Group Of Claims, Consisting Of Claim 25 (And Its Dependent Claims 26-27), Is Patentable Over Anderson and Chevrette.....	10
C. Third Group Of Claims, Consisting Of Claim 28, Is Patentable Over Anderson, Chevrette, and Kang.....	12
D. Fourth Group Of Claims, Consisting Of Claims 36 and 37, Is Patentable Over Anderson, Chevrette, and Ejiri.....	14
E. Conclusion.....	17
CLAIMS APPENDIX .....	A-1
EVIDENCE APPENDIX .....	B-1
RELATED PROCEEDINGS APPENDIX.....	C-1

Application No. 09/408,873

**I. REAL PARTY IN INTEREST**

There exist no new issues or changes; Appellant therefore incorporates section I of *Appellant's Appeal Brief* herein by reference.

Application No. 09/408,873

**II. RELATED APPEALS AND INTERFERENCES**

There exist no new issues or changes in this section; Appellant therefore incorporates section II of *Appellant's Appeal Brief* herein by reference.

Application No. 09/408,873

**III. STATUS OF CLAIMS**

Claims 18, 20 and 25-42 are pending in this application. Of these, claims 18, 25, and 29 are independent claims.

Claims 18, 20, 25-33, and 36-40 are on appeal and have been finally rejected in an Office Action mailed July 1, 2005 (hereinafter referred to as the "*Office Action of July 2005*"), on the grounds further discussed herein.

Claims 1-17, 19, and 21-24 are canceled.

The Office Action of July 2005 indicates claims 34, 35, 41, and 42 are objected to but would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims.

Application No. 09/408,873

**IV. STATUS OF AMENDMENTS**

There exist no new issues or changes in this section; Appellant therefore incorporates section IV of *Appellant's Appeal Brief* herein by reference.

Application No. 09/408,873

**V. SUMMARY OF CLAIMED SUBJECT MATTER**

There exist no new issues or changes in this section; Appellant therefore incorporates section V of *Appellant's Appeal Brief* herein by reference.



Application No. 09/408,873

**VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

The following grounds of rejection are presented for review concerning the first embodiment of the invention, which grounds were newly introduced by the Office Action of July 2005:

Claims 18, 20, 29-33, and 38-40 are rejected under 35 U.S.C. §103(a) as being unpatentable over Saund et al., U.S. 5,528,290 (hereinafter referred to as "Saund") in view of Chevrette et al., U.S. Patent 5,774,179 (hereinafter referred to as "Chevrette").

The following grounds of rejection are presented for review concerning the second embodiment of the invention, which grounds were unchanged by the Office Action of July 2005 yet additional remarks were presented:

Claims 25-27 are rejected under 35 U.S.C. §103(a) as being unpatentable over Anderson US 6,657,667 B1 (hereinafter referred to as "Anderson") in view of Chevrette;

Claim 28 is rejected under 35 U.S.C. §103(a) as being unpatentable over Anderson in view of Chevrette, in further view of Kang et al., US 6,256,058 B1 (hereinafter referred to as "Kang"); and

Claims 36 and 37 are rejected under 35 U.S.C. §103(a) as being unpatentable over Anderson in view of Chevrette, in further view of Ejiri et al., US Patent No. 6,104,840 (hereinafter referred to as "Ejiri").

Application No. 09/408,873

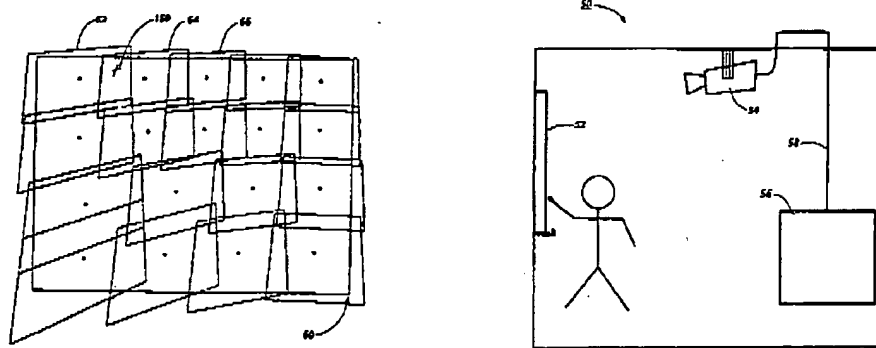
## VII. ARGUMENT

Appellant respectfully traverses the rejection of the pending rejected claims and submits they are in condition for allowance for the reasons set forth below. By way of organization, the first group of claims discussed below in section A concerns a first embodiment of the invention to which new grounds of rejection were raised in the *Office Action of July 2005*, and the second, third, and fourth groups of claims concern a second embodiment of the invention and are discussed below in sections B, C, and D, respectively, to which this Reply Brief responds to additional remarks raised in the *Office Action of July 2005*.

### **A. First Group Of Claims, Consisting Of Claim 18 (And Its Dependent Claims 20 and 31-33) and Claim 29 (And Its Dependent Claims 30 and 38-40), Is Patentable Over Saund and Chevrette**

In this section, Appellant traverses the rejection of the first group of claims, consisting of claims 18, 20, 29-33, and 38-40, as being obvious under 35 U.S.C. §103(a) over Saund in view of Chevrette. In doing so, claims 18 and 29 are discussed in this section as the representative claims of the first group. The rejection regarding claims 18 and 29 is detailed on pages 8-10 of the *Office Action of July 2005*.

Saund discloses a method for transcribing markings on a board using a camera subsystem for capturing sub-images of regions or tiles and piecing the sub-images together to create a high-resolution image of the markings on the board, as described in column 3, lines 1-53, and shown Figures 1 and 3 (reproduced below).

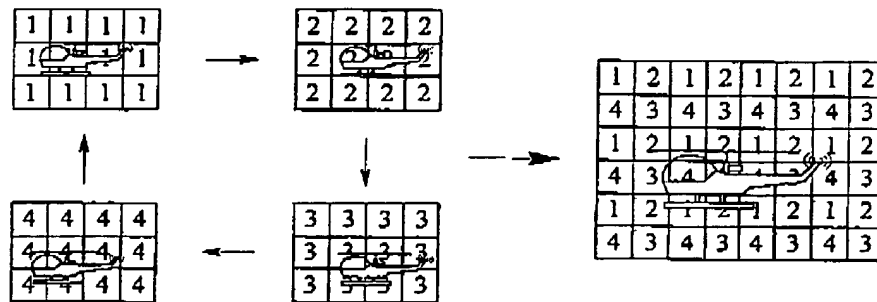


**Saund Figure 3 (left) and Figure 1 (right)**

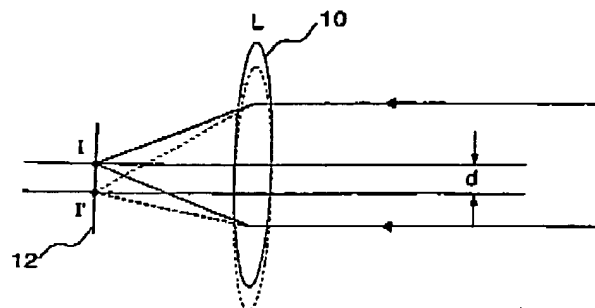
Application No. 09/408,873

Further, Saund discloses at column 3, lines 25-27 that the "Camera subsystem 54 may alternatively comprise an array of fixed or relatable cameras, each directed at a different subregion or subregions".

Chevrette discloses a method for fast microscanning that uses a movable focus lens as shown in Figures 1d and 2 (reproduced below) and described in column 34, line 59 through column 7, line 9. As shown in Figures 1d and 2, microscanning involves moving a lens a distance of a half a pixel pitch to record a microscanned image (e.g., the four single number images in Fig. 1d) and "interlacing" the four microscanned images to arrive at the final image (e.g., the large image with numbers 1-4 in it). This has the effect of increasing the spatial resolution (i.e., reciprocal sampling interval on object plane, e.g., DPI) and the pixel resolution (i.e., number of pixels). In the example in Figure 1d of Chevrette, the four single-number images have a lower spatial and a lower pixel resolution then the final image with numbers 1-4.



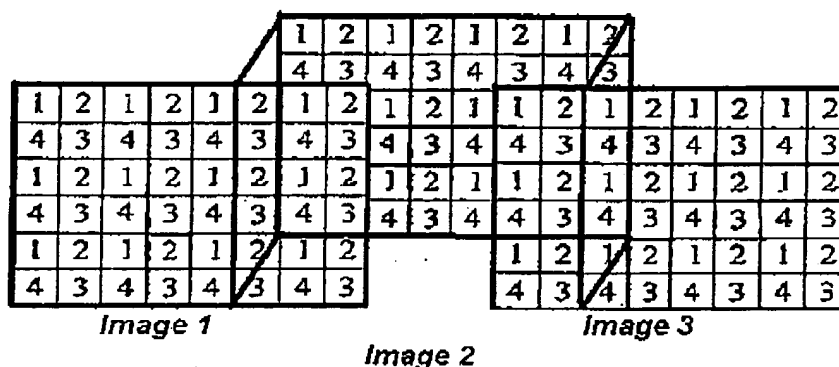
Chevrette Figure 1d



Chevrette Figure 2

Application No. 09/408,873

Referring now to independent claims 18 and 29, Appellant respectfully submits that the claimed system and method are distinguished from combined image capture, as described by Saund, and microscanning, as described by Chevrette, and exemplified in Figure A (reproduced below) in the *Office Action of July 2005* as being illustrative of the combination of Saund and Chevrette (see the *Office Action of July 2005* page 9, line 14), because Appellant's claims 18 and 29 recite a system and method for combining a plurality of views of an area that have been *simultaneously* recorded with a plurality of cameras, where at least one of the plurality of cameras has an offset lens to produce an oblique field of view of the portion it records of the area, and where *the plurality of simultaneously recorded images are combined to produce a composite image having higher resolution than the resolution of the simultaneously recorded views*. Thus, unlike Appellant's claimed invention recited in independent claims 18 and 29 which recites that a composite image is produced by combining a plurality of simultaneously recorded images with at least one being recorded with a camera having an offset lens, image capture as described by Saund when combined with microscanning described by Chevrette yields a composite of interlaced images that produces a higher resolution image as exemplified in Figure A (reproduced below) in the *Office Action of July 2005*.



**Office Action of July 2005 FIGURE A**

More specifically, as shown in Chevrette's Figure 1d, the resulting microscanned image (i.e., the large image with numbers 1-4) is not produced by "simultaneously

Application No. 09/408,873

recording a plurality of views" as claimed by Appellant in independent claims 18 and 29, instead it is produced after "interlacing" four microscanned images (i.e., the four single number images).

Accordingly, Appellant respectfully submits that independent claims 18 and 29 are patentably distinguishable over Chevrette taken on its own. Thus in view of the forgoing, Appellant respectfully submits that the rejection of independent claims 18 and 29 under §103(a) over Saund in view of Chevrette should be withdrawn as claims 18 and 29 are believed to be in allowable condition. Insofar as claims 20, 30-33, and 38-40 are concerned, these claims depend from one of presumably allowable independent claims 18 or 29 and are therefore also believed to be in allowable condition.

**B. Second Group Of Claims, Consisting Of Claim 25 (And Its Dependent Claims 26-27), Is Patentable Over Anderson and Chevrette**

In this section, Appellant traverses the rejection of the second group of claims, consisting of independent claim 25, as being obvious under 35 U.S.C. §103(a) over Anderson in view of Chevrette. In doing so, claim 25 is discussed in this section as the representative claim of the second group. The rejection regarding claim 25 is detailed on pages 12-13 of the *Office Action of July 2005* with further comments on pages 2-6 of the *Office Action of July 2005*.

Appellant incorporates arguments set forth in section VIII.B of *Appellant's Appeal Brief* herein by reference.

Appellant respectfully submits that the remarks in section 9, on page 6, and section 22 on, pages 12 and 13, of the *Office Action of July 2005* fail to consider Appellant's claimed limitation in independent claim 25 that recites that the *offset position* of the lens defined in element (a) (i.e., "(a) recording ... while a lens is positioned at an *offset position* ...") is the *same* offset position in element (b) (i.e., "(b) recording ... while the lens is positioned at *the offset position* ..."), where emphasis has been added. This aspect of the claimed invention is described in Appellant's specification on page 27, lines 2-8, which is reproduced below, where emphasis has been added:

Application No. 09/408,873

Figures 11 and 12 illustrate an alternative embodiment of a single Camera System 1100. For this embodiment, Lens 1120 remains at a fixed offset while obtaining camera images for mosaicing. Rather than changing the lens offset, Camera 1120 is rotated (e.g., 180 degrees) as shown by Arrow 1140. Camera 1101 is supported by a Mount 1130, which is attached to a Surface 1110. The Image Area of Interest 1102 is positioned on Surface 1110.

Thus, unlike Appellant's claimed invention recited in independent claim 25 which recites that a composite image is produced by combining a first recorded view while a lens is positioned at *an offset position* while the camera is in a first position and a second recorded view at *the offset position* after the camera is rotated to a second position, image capture as described by Anderson when combined with microscanning described by Chevrette yields a composite of interlaced images that produces a higher resolution image as shown in Figure A produced in the *Office Action of July 2005* (reproduced above). If the offset position were unchanged, which is neither disclosed nor suggested by either Anderson or Chevrette, the images captured in Figure A, would yield a composite image with a single microscanned image (e.g., with only elements from microscanned image 1, 2, 3, or 4).

Accordingly, Appellant respectfully submits that independent claim 25 is patentably distinguishable over Anderson taken singly or in combination with Chevrette. Insofar as claims 26-27 are concerned, these claims depend from now presumably allowable independent claim 25 and are also believed to be in allowable condition.

**C. Third Group Of Claims, Consisting Of Claim 28, Is Patentable Over Anderson, Chevrette, and Kang**

In this section, Appellant traverses the rejection of the third group of claims, consisting of claim 28, which depends from independent claim 25, as being obvious under 35 U.S.C. §103(a) over Anderson in view of Chevrette in further view of Kang. The rejection regarding claim 28 is detailed on pages 14-15 of the *Office Action of July 2005* with further comments on pages 6-7 of the *Office Action of July 2005*. Claim 28 sets forth, in addition to the limitations of claim 25 discussed above, that in recording

Application No. 09/408,873

the second view of the area, the lens is positioned at the offset position within the plane while the camera is rotated 180 degrees to the second position.

Appellant incorporates arguments set forth in section VIII.C of *Appellant's Appeal Brief* herein by reference.

In response to the remarks on pages 6-7 of the *Office Action of July 2005* that "Applicant has provided absolutely no support for the allegation" ... "that Kang does not permit the lens to be positioned at an offset position within a plane substantially orthogonal to an optical axis of the lens to record a first image and a second image while the camera is in two positions one position 180 degrees rotated from the other", Appellant respectfully submits that Appellant's remark on page 14, lines 5-12 of the Appeal Brief suggested that a camera rotating about an axis that is substantially orthogonal to the focal axis of the lens of a camera, as disclosed by Kang, will not be able to record a first image and a second image such that they may be combined to produce a composite image having a higher resolution than the resolution of the one or more of the recorded view, as claimed by Appellant in element (c) of independent claim 25 from which claim 28 depends.

Accordingly, for these reasons and for the reasons set forth above regarding independent claim 25, Anderson taken singly or in combination with Chevrette and Kang fails to disclose the limitations set forth in claim 28, which incorporates all limitations of claim 25.

**D. Fourth Group Of Claims, Consisting Of Claims 36 and 37, Is Patentable Over Anderson, Chevrette, and Ejiri**

In this section, Appellant traverses the rejection of the fourth group of claims, consisting of claims 36 and 37, which depend from independent claim 25, as being obvious under 35 U.S.C. §103(a) over Anderson in view of Chevrette in further view of Ejiri. The rejection regarding claims 36 and 37 is detailed on pages 15-16 of the *Office Action of July 2005* with further comments on page 7 of the *Office Action of July 2005*. Claims 36 and 37 sets forth, in addition to the limitations of claim 25 discussed above, that the camera is rotated from the first position to the second position about an axis parallel to the optical axis of the lens.

Application No. 09/408,873

Appellant incorporates arguments set forth in section VIII.D of *Appellant's Appeal Brief* herein by reference.

In response to the remarks in sections 12-13, on page 7 of the *Office Action of July 2005*, Appellant respectfully submits that the rotation of a camera as described by Ejiri and as summarized in the *Office Action of July 2005* - "Figure 6 clearly indicates that the camera (position O) is rotated *both along* an axis parallel to the optical axis of the lens ( $\gamma$  rotation) and along an axis perpendicular to the optical axis of the lens ( $\xi$  rotation)" (see section 13, page 7, of the *Office Action of July 2005*, emphasis added) - fails to disclose or suggest rotating from a first position to a second position about an axis that is parallel to the optical axis of a lens, as claimed by Appellant in claims 36 and 37.

Accordingly, for these reasons and for the reasons set forth above regarding independent claim 25, Anderson taken singly or in combination with Chevrette and Ejiri fails to disclose the limitations set forth in claims 36 and 37, which incorporates all limitations of claim 25 (and for claim 37 intervening claims 26 and 27).

#### E. Conclusion

Based on the arguments presented above, claims 18, 20, 29-35, and 38-42 are believed to be in condition for allowance. Appellant therefore respectfully requests that the Board of Patent Appeals and Interferences reconsider this application, reverse in whole the rejection of claims 18, 20, 29-35, and 38-42, and pass this application for allowance.

Respectfully submitted,

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Date: 9/1/05



Application No. 09/408,873

**CLAIMS APPENDIX**

There exist no new issues or changes in this section; Appellant therefore incorporates the Claims Appendix of *Appellant's Appeal Brief* herein by reference.

A-1

Application No. 09/408,873

**EVIDENCE APPENDIX**

There exist no new issues or changes in this section; Appellant therefore incorporates the Evidence Appendix of *Appellant's Appeal Brief* herein by reference.

B-1

Application No. 09/408,873

**RELATED PROCEEDINGS APPENDIX**

There exist no new issues or changes in this section; Appellant therefore incorporates the Related Proceedings Appendix of *Appellant's Appeal Brief* herein by reference.

C-1